

**AMENDMENTS TO THE DRAWINGS**

The attached REPLACEMENT SHEETS (Exhibit A) include changes to Figs. 1 and 4. Specifically, Figs. 1 and 4 have been amended to correct an inadvertent oversight by changing the reference character for the high-voltage sources (HVS) from 13 to 12 and by changing the reference character for the pre-amplifier from 12 to 13, as observed by the Examiner.

**REMARKS**

Claims 1, 3, 4, 6 and 8 through 10 are pending in this Application. Claims 1, 3 and 8 have been amended, claims 2, 5 and 7 cancelled and claims 9 and 10 added. Figs. 1 and 4 have been amended to address the oversight noted by the Examiner by switching the reference characters for the pre-amplifier and high-voltage source. Adequate descriptive support for the present Amendment should be apparent throughout the originally filed disclosure. Applicant submits that the present Amendment does not generate any new matter issue.

**The Specification.**

The Examiner noted that the reference characters for the pre-amplifier and high-voltage source have been reversed and do not correspond to the drawings. In response Figs. 1 and 4 have been amended, as previously noted, to change the reference characters for the pre-amplifier and high-voltage source (Exhibit A). The Examiner's perspicacity is appreciated.

**Claims Objections.**

The Examiner objected to claims 1 and 8 identifying certain issues. In response, the issues noted by the Examiner have been addressed, thereby overcoming the stated bases for the claim objections. Accordingly, withdrawal of the objection to claims 1 and 8 is solicited.

**Claims 1 through 3, 5, 7 and 8 were rejected under 35 U.S.C. § 102 for lack of novelty as evidenced by Hofmeister et al.**

In the statement of rejection the Examiner referred to Fig. 3A of Hofmeister et al., asserting the disclosure of a light-receiving circuit corresponding to that claimed. This rejection is traversed.

The factual determination of lack of novelty under 35 U.S.C. § 102 requires the identical disclosure in a single reference of each element of a claimed invention, such that the identically claimed invention is placed into the recognized possession of one having ordinary skill in the art. *Dayco Prods., Inc. v. Total Containment, Inc.*, 329 F.3d 1358, 66 USPQ2d 1801 (Fed. Cir. 2003); *Crown Operations International Ltd. v. Solutia Inc.*, 289 F.3d 1367, 62 USPQ2d 1917 (Fed. Cir. 2002). There are fundamental differences between the light-receiving circuit defined in independent claims 1 and 8 that scotch the factual determination that Hofmeister et al. disclose a light-receiving circuit identically corresponding to those claimed.

Notwithstanding what the Examiner may have perceived as a similarity between the block diagram or block configuration of the receiving circuit disclosed by Hofmeister et al. and that of the present invention, there are **fundamental differences** which undermine the factual determination of lack of novelty under 35 U.S.C. § 102. Specifically, the receiver of the present invention also provides a variable voltage source, a current-mirror circuit, a photodiode, a resistor as a current-to-voltage converter, and a control circuit for controlling the variable voltage. This structure is neither disclosed nor suggested by Hofmeister et al.

Indeed, it should be apparent that the receiver disclosed by Hofmeister et al. combines a constant voltage source 106 which outputs a relatively low and constant voltage (paragraphs [0016] and [0022]), and a voltage converter 202 which outputs a relatively high and variable

voltage by pumping the output from the constant voltage source 106. This is far afield from the present invention which comprises a receiver that includes a DC-to-DC converter that outputs a constant and relatively high voltage in a voltage controller including a single transistor Q1 to reduce the relatively high voltage. The output of the DC/DC converter is constant and the bias voltage to be supplied to the PD is controlled only by reducing this constant voltage from the DC/DC. Controlling is carried out by the single transistor and only by reducing the voltage from the DC/DC converter, which shortens the time constant of the feedback control. In the system disclosed by Hofmeister et al., the pumping efficiency of the DC/DC converter changes, thereby inevitably increasing the time constant. One reason for lengthening the time constant is that the output of the DC/DC converter generally provides a capacitor with quite a large capacitance to reduce the ripple thereof.

When a circuit with a large time constant is introduced within the feedback loop, it is very difficult to stabilize the feedback loop. A large overshooting or undershooting, or a self-oscillation is occasionally observed. Accordingly, Hofmeister et al. adopts the control in digital by using a CPU, e.g.

In contradistinction to Hofmeister et al., in accordance with the present invention, only the collector-emitter voltage  $V_{CE}$  of the Q1 is adjusted to provide the bias voltage to the PD, which shortens the time constant of the Q1. The time constant may be shortened to the cut-off frequency of the Q1. No elements with a large time constant are introduced within the feedback loop in the present receiver. Therefore, the stability of the control loop is realized by connecting a capacitor between one node and the ground. Moreover, the capacitance of the capacitor may be indifferent.

Consistent with the foregoing, independent claims 1 and 8 have been amended to clarify the above argued differences between the claimed light-receiving circuits and Hofmeister et al. Accordingly, the above argued functionally significant differences between the claimed light-receiving circuits and the light-receiving circuit disclosed by Hofmeister et al. undermine the factual determination that Hofmeister et al. disclose a light-receiving circuit identically corresponding to those claimed. *Minnesota Mining & Manufacturing Co. v. Johnson & Johnson Orthopaedics Inc.*, 976 F.2d 1559, 24 USPQ2d 1321 (Fed. Cir. 1992); *Kloster Speedsteel AB v. Crucible Inc.*, 793 F.2d 1565, 230 USPQ 81 (Fed. Cir. 1986).

Applicant, therefore, submits that the imposed rejection of claims 1 through 3, 5, 7 and 8 under 35 U.S.C. § 102 for lack of novelty as evidenced by Hofmeister et al. is not factually viable and, hence, solicits withdrawal thereof.

**Claims 4 and 6 were rejected under 35 U.S.C. § 103 for obviousness predicated upon Hofmeister et al.**

This rejection is traversed. Specifically, claims 4 and 6 depend from independent claim 1. Applicant incorporates herein the arguments previously advanced in traversing the imposed rejection of claim 1 under 35 U.S.C. § 102 for lack of novelty as evidenced by Hofmeister et al. The additional comments offered by the Examiner with respect to claims 4 and 6 do not cure the previously argued deficiencies of Hofmeister et al.

Applicant, therefore, submits that the imposed rejection of claims 4 and 6 under 35 U.S.C. § 103 for obviousness predicated upon Hofmeister et al. is not factually or legally viable and, hence, solicits withdrawal thereof.

**New claims 9 and 10**

New claims 9 and 10 are free of the applied prior art by virtue of their dependence upon independent claim 8, the patentability of which has been argued *supra*. Moreover, Applicant would rely upon the additional limitations expressed in each of claims 9 and 10.

Based upon the foregoing it should be apparent that the imposed objections and rejections have been overcome, and that all pending claims are in condition for immediate allowance. Favorable consideration is, therefore, solicited.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

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